Anton Edward Krukowski

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Education

3/00	PhD, Biophysics, University of California, San Francisco
8/96	Computational Neuroscience summer course, Marine Biological Laboratory, Woods Hole, Massachusetts
5/91	BS, Mathematics and physics, Yale University, New Haven, Connecticut, magna cum laude

Research Experience

5/00 – present	**Senior Research Associate**, Lee Stone's laboratory, Human Factors Research and Technology, NASA Ames Research Center, Moffett Field, California. Studying human psychophysical and oculomotor responses to visual and auditory motion.
8/94 – 5/00	**Graduate Student and Post-Doctoral Researcher**, Prof. Ken Miller's laboratory, Physiology Department, University of California, San Francisco. Developed an experimentally motivated model of the thalamic input-recipient layer of cat primary visual cortex that can account for many spatial and temporal response properties of cortical neurons.
9/93 - 8/94	**Graduate Student**, Prof. Ken Dill's laboratory, Pharmaceutical Chemistry Department, University of California, San Francisco Studied and analyzed a lattice model for examining the effects of solute and solvent shape on the entropic component of chemical potentials of complex solutions.
9/92 - 9/93	**Graduate Student**, rotation research projects in various laboratories (Profs. Robert Stroud, Peter Walter, Ken Dill, Juan Korenbrot), University of California, San Francisco
9/91 - 8/92	**Research Technician/Computer Programmer**, Prof. David Agard's laboratory, Howard Hughes Medical Institute, Department of Biochemistry and Biophysics, University of California, San Francisco Modified and expanded an existing model used for calculating the binding energy of enzymes and ligands using detailed crystallographic structures and rotamer libraries of amino acid side chain conformations.
9/88 - 7/91	**Research Technician**, Prof. Axel Brunger's laboratory, Howard Hughes Medical Institute, Department of Molecular Biochemistry and Biophysics, Yale University, New Haven, Connecticut Explored simulated annealing and Monte Carlo protocols for the refinement of Xray crystallographic data.
Summer 88, 89	**Research Technician**, Prof. John Kuriyan's laboratory, Rockefeller University, New York, New York Studied molecular dynamics simulations of protein structures.

Publications

Krukowski, A. E., Pirog, K. A., Beutter, B. R., Brooks, K. R., and Stone, L. S., "Human discrimination of visual direction of motion with and without smooth pursuit eye movements," Journal of Vision, in press, (2003).

Troyer, T. W., Krukowski, A. E., and Miller, K. D., "LGN Input to Simple Cells and Contrast-Invariant Orientation Tuning: An Analysis," Journal of Neurophysiology, 87:2741-2752 (2002).

Krukowski, A. E., and Miller, K. D., "Thalamocortical NMDA Conductances and Dominant Intracortical Inhibition Can Explain the Low-Pass Nature of Cortical Temporal Tuning," Nature Neuroscience, 4:424-430 (2001).

Lauritzen, T. Z., Krukowski, A. E., and Miller, K. D., "Local Correlation-Based Circuitry Can Account for Responses to Multi-Grating Stimuli in a Model of Cat V1," Journal of Neurophysiology, 86: 1803-1815 (2001).

Krukowski, A. E., "A Model of Cat Primary Visual Cortex and its Thalamic Input," Ph.D. Thesis , University of California, San Francisco (2000).

Troyer, T.W., Krukowski, A.E., Priebe, N.J., and Miller, K.D., "Contrast-Invariant Orientation Tuning in Cat Visual Cortex: Thalamocortical Input Tuning and Correlation-Based Intracortical Connectivity," Journal of Neuroscience 18:5908-5927 (1998).
This publication included an asterisk indicating that the first two authors contributed equally to the work.

Krukowski, A.E., Chan, H.S., and Dill, K.A., "An exact lattice model of complex solutions: Chemical potentials depend on solute and solvent shape," Journal of Chemical Physics, 103:10675-10688 (1995).

Baker, D., Krukowski, A.E., and Agard, D.A., "Uniqueness and the ab initio phase problem in macromolecular crystallography," Acta Crystallographica Section D - Biological Crystallography, 49:186-192 (1993).

Brunger, A.T., Krukowski, A., and Erickson J.W., "Slow-cooling protocols for crystallographic refinement by simulated annealing," Acta Crystallographica Section A - Foundations of Crystallography, 46:585-593 (1990).

Abstracts

Krukowski, A. E., and Stone, L. S., "Simultaneous oblique effects in human pursuit and perception," Society for Neuroscience, New Orleans, Louisiana, (2003).

Krukowski, A. E., Pirog, K. P., Beutter, B. R., Brooks, K. R., and Stone, L. S., "Visual direction discrimination with and without smooth pursuit," Society for Neural Control of Movement, Santa Barbara, California (2003).

Krukowski, A. E., and Stone, L. S., "Initiation of smooth pursuit eye movements to a moving virtual auditory target," Society for Neuroscience, Orlando, Florida, 716.1 (2002).

Krukowski, A. E., Begault, D. R., Wenzel, E. M.,and Stone, L. S., "Human smooth pursuit eye movement responses to visual, auditory, and imagined target motion," Society for Neural Control of Movement Satellite Meeting on Multisensory Interactions Subserving Orienting Behavior, Naples, Florida (2002).

Krukowski, A. E., Begault, D. R., Wenzel, E. M.,and Stone, L. S., "Human Oculomotor Responses to Virtual Auditory Motion," Society for Neuroscience, San Diego, California, 404.15 (2001).

Krukowski, A. E., and Miller, K. D., "Orientation Response Properties of Inhibitory Cells in a Model of Cat Primary Visual Cortex," Journal of Vision, 1:434a (2001).

Lauritzen, T. Z., Krukowski, A. E., and Miller, K. D., "Local Correlation-Based ('Push-Pull') Circuitry Can Account for Non-linear Summation of Stimuli in a Model of Cat V1," Computational Neuroscience Society, Pacific Grove, California (2001).

Krukowski, A. E., Troyer, T. W., and Miller, K. D., "A Model of Visual Cortical Temporal Frequency Tuning," Computational Neuroscience Society, Brugge, Belgium (2000).

Lauritzen, T. Z., Krukowski, A. E., and Miller, K. D., "Local Push-Pull Circuitry Can Account for Cross-Orientation Inhibition in a Model of Cat V1," Society for Neuroscience, New Orleans, Louisiana (2000).

Krukowski, A. E., Hoffman, A., and Miller, K. D., "Correlation-Based Intracortical Connectivity in Striate Cortex Can Account for Temporal Frequency Tuning and 'Cross-Orientation' Inhibition," Society for Neuroscience, Los Angeles, California (1998).

Krukowski, A. E., Priebe, N. J., Troyer, T. W., and Miller, K. D., "A Model of Simple-Cell Orientation Tuning: Feedforward Tuning and Correlation-Based Intracortical Connectivity," Society for Neuroscience, Washington, DC (1996).

Fellowships

9/92 - 5/98 Howard Hughes Predoctoral Fellow in biophysics, Howard Hughes Medical Institute

Volunteer Experience

9/97 – present Singer and member of the Board of Directors of the San Francisco Bach Choir

10/93 - 6/96 Volunteer teacher, ninth grade physics, Science Education Partnership, University of California, San Francisco, Balboa High School, San Francisco, CA

Professional Associations

Society for Neuroscience
Society for Cognitive Neuroscience
Society for the Neural Control of Movement